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FIRST  
ANNUAL REPORT  
ON THE CONDITION  
OF THE  
COMBINED SANITARY DISTRICT  
OF  
WEST SUSSEX.

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# REPORT

ON THE

## Health of the Combined Sanitary District of West Sussex.

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THE combined Sanitary district of West Sussex consists of five rural and three urban sanitary authorities, with an area of 231,417 statute acres, or rather more than 360 square miles.

In Horsham, Petworth, and Thakeham the sanitary district coincides with the Union and registration district. In Steyning district, Hove, New Shoreham, and the greater part of Preston, are places with urban powers, so that the rural district corresponds only to part of the Union. In East Preston district, Worthing, West Worthing, Littlehampton, and Arundel, are places with urban powers; and here the rural Sanitary district coincides with the remainder of the Union area. Upon this area there were at the census of 1871, 70,586 people living in 13,665 houses, or 5·17 persons in each house. The soil of this district varies in each Union; it will be enough, however, to mention this subject very briefly at present, for there are not sufficient data yet by which the influence of soil upon disease can be determined.

In Hampshire the chalk downs bifurcate and form (1) the North Downs, which run along Surrey and Kent, and (2) the South Downs, which are met with along the south coast. In the fork thus formed is a large tract of weald clay, and between this formation and the chalk is a sandy soil known as upper and lower greensand. In the north part of the combined Sanitary district clay is found; in the south there is chalk, which, close to the sea, is overlapped in many places by brick-earth and gravel for a few feet in depth. Between the clay and the chalk is a sandy formation, but these beds form only a small portion of the area and not many people live upon them. Horsham and Petworth districts are chiefly on the weald clay; Worthing, West Worthing, Littlehampton, East Preston, and the southern part of Steyning districts are on the chalk, while Thakeham and the upper portion of Steyning districts are about equally on clay, sand, and gravel.

There are two chief rivers in the district. The river Arun rises in St. Leonard's forest in the north of the county and passes down in a southerly direction; at Pulborough it is joined by the river Rother, which comes from the west; then, pursuing a very tortuous course it widens considerably, and passes through a break in the

South Downs between Amberley and Arundel and falls into the sea at Littlehampton. In its course from Pulborough to the sea the banks on either side are very low and form an alluvial flat. In wet weather the water floods the adjacent lands constantly, but very few people live near, and the villages of Pulborough and Amberley are perched up on sand beds some feet above the marshy area thus formed. This river receives the rain-fall of the western part of the district. The river Adur also rises in the north, and running south it passes through the Downs between Steyning and Bramber and flows into the sea at Kingston, near New Shoreham. This river receives the rainfall of the eastern part of the district.

#### DEATH-RATE.

During the year 1874 the deaths of 1115 persons were registered in a population of 74,797 people; the death-rate for the whole district was, therefore, 14·9 per 1000 per annum. This rate varied in different portions of the district.

Name of Sanitary Authority.	Population.	Deaths.	Death-rate per 1000 per ann.
Steyning rural ...	15,016	219	14·60
Horsham ditto ...	19,802	312	15·75
Petworth ditto ...	10,162	179	17·61
Thakeham ditto ...	8,540	126	14·75
East Preston ditto ...	9,320	115	12·34
Worthing urban ...	7,935	119	15·00
West Worthing ditto	450	5	11·10
Littlehampton ditto...	3,572	40	11·20
Totals	74,797	1,115	14·90

This rate of rather less than 15 per 1000 must be considered as showing a very favourable state of health in West Sussex, for in the decade 1861–70 the death-rate for the whole district was 17·36, and this again is less than the average rate for similar districts. In the ten years 1864–73 the annual rate of mortality in small towns and country parishes throughout England and Wales was 19·5 per 1000, and in 1874 it was 19·3. The south-eastern counties have for many years shown a lower death-rate than any other division of the kingdom. In the ten years 1851–60 the rate for the whole division, including Surrey, Kent, Sussex, Hampshire, and Berkshire was 19·6 against 22·2 for England and Wales; in the ten years 1861–70 it was 19·1 as compared with 22·4; and in 1873 it was 16·7 against 21·2.

This combined Sanitary district contains no town of more than 8000 inhabitants; the population is scattered over a large area, and there are no injurious trades nor any circumstances which would tend to give a high rate of mortality.



Although the number of persons who died in 1874 was 1115, I have only been able to analyse the 785 deaths which occurred in the nine months ending December 31st, 1874, as the arrangements for the supply of the Registrars' returns came into operation at the commencement of the second quarter of the year.

*Ages at Death.*—In considering the healthiness of a district, regard must be paid to the number of persons dying at different ages. A high infant mortality is an important indication either of bad sanitary arrangements or of neglect or carelessness on the part of the parents. A high rate above 60 years of age is a fair sign that the circumstances in that area are favourable to the prolongation of human life. To find out precisely the true rate of mortality it would be necessary to know the number of persons living at any age and compare with it the number of those who die at the corresponding age. This, however, cannot be done by any system of registration now in use, and for all practical purposes it will suffice to know: 1. The number of children dying under 5 years of age. 2. The number of persons dying between 5 years and 60 years. 3. The number of those dying over 60 years of age. If, now, the numbers of those living at the corresponding ages be known it would be easy to compare the death-rate in different places. As this report only covers a period of nine months, I must defer such an analysis until a future time.

Another way of contrasting the death-rates in different parts of the country, besides observing the relation of deaths to lives, is to notice the proportion between deaths at one age and deaths at another age. In England, during the year 1874, out of every 100 persons dying—

25	were under 1 year of age
51	„ between 1 year and 60 years
24	„ over 60 years
<hr/>	
100	

In West Sussex, during the same period, out of every 100 persons dying there were—

18	under 1 year of age
47	between 1 year and 60 years
35	over 60 years
<hr/>	
100	

These figures show a smaller amount of infant mortality and a considerable prolongation of adult life.

Table I. shows the ages at death of the 785 persons who died in this district from April to December 1874. In addition, the ages of 1326 persons who died in Horsham Union in five consecutive years are given, so that, by taking a larger number, a more accurate conclusion might be arrived at when the figures are contrasted with those in other parts of the country. Of this total of 2111 individuals, 1159 were male and 952 were female; 381 died under

1 year; 603 died under 5 years; 770 died between 5 years and 60 years; while as many as 738 died over 60 years of age.

In the whole of England and Wales 514,879 persons died in the year 1871; of these 40 per cent. died under 5 years, 37 per cent. died between 5 and 60 years, and 23 per cent. over 60 years of age. In West Sussex last year 28·5 per cent. died under 5 years, 36·5 per cent. died between 5 and 60 years, and 35·0 per cent. died over 60 years of age. This comparison shows that in infancy and the early years of childhood fewer children die in this district than in the country generally, while the chances of living to an advanced age are greater. If large towns were taken the contrast would be still more marked and show a very favourable return for this district.

The following figures will also show some points of interest. In the year 1874 in England and Wales 526,701 persons died; of these 24 per cent. were under 1 year, 52 per cent. were between 1 year and 60 years, while 24 per cent. died over 60 years of age. It will be seen that as many die as infants—*i.e.* under 1 year—as die over 60, and the sum of these two numbers is nearly equal to the number of those who die in the intervening period. In West Sussex 18 per cent. died under 1 year, 47 per cent. between 1 year and 60 years, while as many as 35 per cent. died over 60 years of age. Infant mortality is, therefore, much lessened, while many more die in old age than in other parts of the country. In large towns the infant mortality is much higher and adds greatly to their high rate of mortality.

The mortality amongst male infants is much greater than amongst those of the opposite sex; more male children are born than female children, but that will not account for all the difference, nor indeed can I at present give any explanation of the fact. Of 381 infants dying under 1 year 233 were male and 148 were female; in the second year of life 65 males died to 41 females; after that period the two sexes more closely approximate in their rate of mortality. Of the 785 deaths there died in

			Total.		M.		F.
June quarter	...	...	261	...	142	...	119
September ditto	...	...	264	...	153	...	111
December ditto	...	...	260	...	142	...	118
			785			437	348

Since the occupation of this district is chiefly agricultural, I append here the result of an enquiry into the age at death of the "farm labourer."

The agricultural labourer leads a very healthy life and often lives to a very advanced age. Constantly in the open air and engaged in an occupation which is neither laborious nor dangerous, he seldom suffers from any other complaints than bronchitis, rheumatism, or lumbago, which affect him when he gets aged. A few die of consumption, and this disease is most fatal between the ages of 30 and 40. Many die of apoplexy or softening of the brain, and these diseases are most fatal after 65 years of age. I have analysed the



registers of deaths and extracted the ages at death of 357 labourers. About one-third die under 60 years, while two-thirds die above 60 years of age.

20 died between 20 and 30 years of age				
33	„	30	„	40
22	„	40	„	50
46	„	50	„	60
75	„	60	„	70
102	„	70	„	80
55	„	80	„	90
4	„	90	„	100

—  
Total 357

The average age at death was 63·1 years.

*Causes of Death.*—The causes of death are enumerated in Table II. The table has been formed on the plan adopted by the Registrar-General with some modification. Such diseases as bronchitis, pneumonia, and pleurisy have all been classed together as “diseases of the respiratory organs,” because our knowledge of such disorders is not increased by a finer division, nor, indeed, would more accuracy be attained. Of the 785 deaths 99 were due to zymotic diseases, and these will be considered presently. One hundred and thirty-four were registered as brain diseases; this term includes paralysis or palsy, apoplexy, softening of the brain, epilepsy, and convulsions. This class is the largest in the list; most of the cases occurred in people of an advanced age and were due to those changes which take place in the brain owing to senile decay. Ninety-six deaths were from disease of the lungs, and 88 from consumption. These disorders carry off a great part of the population of this country; they are due in a great measure to cold and damp, but the cases are not sufficiently numerous to form an opinion as to the influence of soil and weather upon these complaints. No less than 33 infants were born prematurely, while 44 died in infancy from debility and wasting away; 75 persons died of old age, some of them at a very advanced period of life; many more people were of an equal age whose deaths are registered from some other cause. By reference to Table III. it will be seen at what ages the various deaths occurred. Sixteen deaths were due to accidents, and of these 15 were males and 1 female. This must be looked upon as a very small mortality and as showing how much slighter is the risk of life amongst an agricultural than amongst a mining population. Fifteen persons committed suicide, but deaths from this cause will be discussed hereafter. The other causes of death call for no special comment.

#### ZYMOTIC DISORDERS.

This term includes those diseases which are commonly looked upon

as catching or contagious, such as small-pox, measles, scarlet fever, diphtheria, hooping-cough, typhus and typhoid fevers, diarrhoea, and cholera. Some call this group "preventible disorders;" at any rate they form a class which is capable of being much reduced, and to which more especially sanitary work is capable of effecting useful results. Out of 785 deaths 99 were due to this group of disorders, or 1·7 to every 1000 of population. This is a much lower rate than prevails in large towns; indeed, during the past year, the rate in 18 large towns seems to have been as high as 4·5 per 1000. The scattered population, the large amount of fresh air, the absence of any overcrowding, and the ease with which any case can be isolated, help in a great measure to account for the smaller rate in country districts.

Horsham and Steyning districts have had the greatest mortality from this cause; this is chiefly due to the prevalence of measles, diphtheria, and hooping-cough in these districts. Table IV. shows the number of deaths from each cause in each Sanitary district.

*Diphtheria.*—This disease was very prevalent in the south-east of England in the last quarter of the year; during this period 5 deaths occurred in the town of Horsham from this disorder. In all 21 persons died from this cause, of whom nearly all were children; of these 11 were attacked in Horsham Union and 6 in the Steyning Union. But besides those who died a great many more were attacked with sore-throat and returned as such, so that it is impossible to make out how many were ill from this complaint. Those who suffered did not live in the worst houses nor where the drainage was deficient; on the contrary, the disorder appeared amongst small tradesmen and people living under good sanitary conditions. In no case could the disease be traced to the water supply, for, in Horsham at least, some had wells, others used the water-works water, and in nearly each case a different source of water supplied the house. Nor were the drains at fault, because those houses with open and offensive cesspools were not attacked, but those provided with well-constructed pans and traps and duly ventilated. Nor could the disease have been caught at school since there was no relation whatever to the fact of school attendance and the spread of the epidemic; nor, indeed, did one family seem to catch it from another, as it appeared in different parts of the district and in places where no inter-communication had existed. Yet the cases had some points in common. Nearly all who died had suffered from measles in the spring of the year, and since that time they had been weakly and ailing. In the summer time there had been much drought and this was followed by heavy rains in the autumn which caused much dampness and inclement weather; this, too, was accompanied by very dense fogs which have been more prevalent over the Weald this autumn than for many years. This, too, was a noticeable fact,—that after every cold fog some cases of diphtheria appeared, and when it attacked any child that had previously been ailing in health it often brought about a fatal result. But at the same time many other people suffered from colds, bron-



chitis, sore-throats, and other affections of the respiratory organs, so that altogether it has been an unhealthy season, and those have suffered more who live on clayey and damp soils than those who dwell on the chalk or sand, where indeed the disease has been almost absent. Diphtheria, therefore, has been coincident with, if not caused by, cold and damp, and the weakly have succumbed. It is worth noting that a mild form of scarlet fever has prevailed during the past year in many places, but not in those parts where diphtheria has broken out.

*Measles.*—This disorder was very prevalent in Horsham in the early part of the year. Between the end of February and the middle of July 225 children were absent from various schools in the town from this cause; of these 3 died. Several other children were attacked of an age too young to go to school; 3 infants died in this way. No accurate statement can be given as to the precise number attacked, but it seems at least probable that not less than 300 suffered by the epidemic. The disease reached its highest point early in May, declining throughout June, and disappearing the middle of the following month.

Most, if not all, of the fatal cases were due to bronchitis or pneumonia, arising from inclement weather and too early exposure to the air.

Three died in the Thakeham Union.

The epidemic at Horsham was due to the children catching it from one another at school, but no means were taken to stop the spread of the disorder, as it broke out before my appointment was made; and it is very difficult to find out what families are attacked, unless they happen to be paupers, when their names appear on the lists supplied by the Clerk to the Sanitary Authority.

*Scarlet Fever* has appeared in many parts of the district during the past year, but the cases have been of a very mild character, and but 3 deaths have resulted.

In the Thakeham Union it attacked a few children at Findon, about the middle of May, and again broke out in a neighbouring hamlet at the end of September; in the latter case only one family was affected, and the disease spread no further.

In other villages a few families were similarly attacked. In these cases, occurring in isolated cottages, and in places distant from each other, it is probable that the children caught the disease by going to school. A clearer case of contagion was met with on the Downs in November.

A Vaccination Station is established in a village where, twice a year for three successive Tuesdays, women living in the neighbourhood bring their infants to be vaccinated; the days appointed were October 20th and 27th and November 3rd. On October 7th a little boy living at the Vaccination Station was taken ill with scarlet fever, and on the next day he had a rash and sore-throat; the attack was not very



severe, and the boy recovered in about a fortnight. On October 20th, two days after the appearance of the rash in the first case, four mothers took their infants to be vaccinated; each woman lived some distance apart and had had no previous connection with each other. In each case the mother brought back the fever to her other children, and in the course of a fortnight 12 children were attacked with scarlet fever. Recovery followed in each case, and as the cottages were away from any other houses no further spread of this disease occurred. The children were attacked on the following dates: on October 28th four fell ill in different houses; on the 29th, one; on the 30th, one; on November 1st, one; on the 2nd, two; on the 3rd, one; on the 4th, one; and on the 6th, one. In one case the mother and infant were attacked.

At the Convent at Worthing a child was brought from London on October 13th, from an infected neighbourhood; a week after she fell ill with scarlet fever. On October 27th three other girls fell ill and went through a mild attack of the disease. Isolation was carried out, disinfectants were freely used, and no further spread occurred; the epidemic was a mild one, and recovery followed in each case.

*Typhoid Fever.*—Four deaths from this disease were registered. In one, the cause seemed to be due to a broken rain-water pipe which opened directly into a cesspool which had not been emptied for years; from this pipe most noxious gases were constantly emanating, and more especially in wet weather. As the fracture was near a window the smell in the room was at times almost unbearable; another child was also attacked but recovered; no other cases of this disorder were to be found in the town, and the children lived constantly at home, so that the only cause seemed to be the foul gases escaping from the cesspool. In another case the closet was inside the house, and no means of ventilation were provided; the soil pipe emptied into a large cesspool with no outlet; in course of time the pipe became blocked up, and remained so for about two months; three persons had typhoid fever, of whom one died. A third case was caused in a similar manner, while the fourth was of a doubtful character. In each case alterations have been made which will prevent a renewal of such a nuisance. These cases occurred in various parts of the district, and were limited to the houses in which they broke out. This limitation of the disease, and the absence of any other similar cases in the neighbourhood, lead me to believe that typhoid fever may arise *de novo* under unhealthy sanitary arrangements. In another case three children were in a delicate state of health, and were liable to sore throats; then two of them were attacked with typhoid fever; on inquiry it was found that a smell of sewer-gas was often noticed in the basement of the house; on examination there were found to be some old drains full of decomposing matter under the house, and these had been there for a long time unknown to the occupiers. It appears that when the old cesspool was removed, and new drains were connected with the main sewers in the town, the

workmen had left the old drains full of hurtful matter, and the noxious gases from this escaped into the house. This condition of things has since been remedied.

*Diarrhœa*.—This disease accounts for twenty-two deaths; rather more than half were amongst children, and arose more chiefly from errors in diet, or from bad water, or from insanitary conditions; the remainder occurred amongst old people, and these being feeble, died from exhaustion.

### DISINFECTANTS.

In all cases of zymotic disease simple rules have been given to the people as to the use of disinfectants, and handbills have been printed and distributed for this purpose.

The best disinfectants are the ancient elements, air, earth, fire, and water. Air dilutes and carries away all noxious gases, and the healthy state of the district is in a great measure due to the abundance of fresh air to each house; the mortality in towns is mainly due to the overcrowded state of the population, and the want of open spaces.

The earth absorbs sewage and takes up the decomposing products, which fertilize the soil and are useful for plants, which thrive by the process; thus it is that irrigation is the best method at present known for dealing with sewage.

Fire at once destroys any noxious germs, and clothing may be easily disinfected by being baked in an oven; or better still, any rags or old linen can be destroyed by being burnt at once.

Water washes away and dilutes any offensive products, and conveys them to some distant point where they can be advantageously used upon the soil, and cause no nuisance unless they enter a running stream, or are allowed to accumulate.

Various chemical substances have been used for the purpose of disinfection. By far the best plan is to burn sulphur or brimstone in a room after the patient has been removed, and then the walls and the floor should be thoroughly cleansed. The common plan of exposing chloride of lime in a saucer in the sick room, or of pouring carbolic acid down a blocked-up or foul drain, is an useless procedure. Too often these chemicals merely hide a nuisance by producing a more powerful smell. In "catching" disorders, like measles, scarlet fever, and small-pox, isolation should be promptly carried out; school attendance must be prohibited, and all washing should be done at home; any old rags, linen, &c., should be burnt. In typhoid fever, where the danger chiefly arises from the evacuations, these should be at once covered over with Condyl's fluid or carbolic acid, and buried in the earth away from any well; on no account should they be thrown down a drain or into a cesspool, or otherwise a spread of the disorder may be looked for. The best plan



in any case that may arise, is to tell the people what to do, and to provide for the poor what is needful in the way of disinfection.

### ACCIDENTAL OR VIOLENT DEATHS.

Under the head of Accidental or Violent Deaths 32 were registered in the nine months, out of a total of 785; of these 15 were suicidal, 16 from accidents, and one was murdered; the latter was the case of a new-born male child that was found on the sea-shore. Of the 15 suicides 12 were male and three were female. This large proportion of suicides is a point which calls for notice. In the whole of England, in 1871, one person in every 344 who died committed suicide, giving a rate of 2·9 per 1000 deaths; in West Sussex no less than one in every 52 who died committed suicide, giving a rate as high as 19 per 1000 deaths. The method adopted in each case is given on Table V. In many cases there was a distinct history of insanity, and in some, other members of the family had either committed suicide, or had been confined in an asylum. The station in life of most of them was that of a labourer or small farmer. It seems, that in an agricultural class, lunacy is more common than among those who lead a more active life; or it may be rather be, that those who have more physical and intellectual vigour, leave agricultural work for other employments which produce higher wages. Whatever the cause, the proportion of lunatics in the south-eastern counties of England is much higher than in the northern ones. In the census returns for 1871, the lunatics in the south-eastern counties were to the general population as one in 387; in London, one in 896; in England and Wales, one in 574; and in Yorkshire, one in 847. A similar ratio is also true of the idiots; in the south-eastern counties the idiots were in 1871 to the general population as one in 518; in London, one in 1708; in Yorkshire, one in 901; and in England and Wales, one in 771. The fact that Earlswood Asylum is in Surrey may help to explain the excess of idiots, but in addition, should be added those children to be met with in every workhouse and village school who stand on the doubtful border-line. The large amount of mental disease thus met with may, to a large extent, if not altogether, account for the great excess of suicides in this county.

I am told that marriage between near relations is very common in some parts of the district, but this subject will be considered at a future time, when enough facts have been collected to form sufficient data for such inquiry. It is, no doubt, important to render a home healthy, and to prolong the average of human life, but there yet remains much to be done in making such lives worth living; in raising the labourer from a condition of mental torpor and apathy into an intelligent and thinking being; in making him more self-reliant and more provident; and in checking the lamentable amount of ignorance and mental weakness which is so constantly met with. For one result of all this is to be found in the great amount of pauperism



in many of the Unions, rising as high as one in 10, or even higher; and sanitary work must be hindered when the people have not the intelligence to be clean.

### WATER-SUPPLY.

Too much importance cannot be given to the subject of a good water supply, and yet this is a point very commonly unheeded.

The purest source of water is that which falls upon the earth as rain, but in small villages a great many houses are not provided with shoots, or with any means of catching the water. Most houses are supplied with wells of from ten to thirty feet in depth, and they are very liable to become contaminated, as any surrounding dirt can readily be washed in during a heavy shower. The water in these wells is generally hard from containing salts of lime, which are taken up by the water in passing through the soil. This is a source of frequent complaint by the poor, as the "hardness" prevents them from using it for washing and other domestic purposes. In the neighbourhood of Horsham there is a good deal of iron in the soil in many places, and the water is often impregnated with this metal so much as to render it unpalatable. It is no uncommon case for people to drink from a running stream or from a stagnant pond rather than use water which contains so much lime and iron. A great improvement might be effected by digging much deeper wells so as to draw the water from the water-bed itself; and in a hamlet or small village a public well might be sunk to a great depth, and the people could fetch the water that they require. A shallow well is too often merely a dipping-hole, and it is generally empty in very dry weather, and then cottagers are put to great difficulty in obtaining good water. Nor is this the only evil, for when after a long drought the rain comes and fills the wells, any decomposing substances or decayed animal and vegetable matters in the neighbourhood are washed into the soil and penetrate into the wells, or sometimes they are washed directly in if the top of the well be not properly constructed. It is not at all unusual to find cases of illness arising at the commencement of wet weather, and in many cases it may be traced to the impurity of the water in the way just mentioned. The wells are frequently too near the cesspools, and if the soil be porous and the cesspool uncemented, contamination is sure to take place; in such cases, however, the water is generally so bad that no one thinks of using it.

In making a well it is essential that it should have no uncemented cesspool near it, so as to prevent the chance of any pollution from such a dangerous source; the well-top should be made so as to be above the level of the surrounding ground, which should slope upwards towards it; in this way no surface washings could be carried in by accident. The well for some feet in depth ought to be surrounded by clay, so as to allow the water in the soil to enter the well after being passed through and filtered by the earth. No drain pipes ought to pass near a well under any condition.

Here and there on the South Downs wells are sunk to a great depth before any water can be reached, and in some places large underground tanks have been made to catch the rain-water from the roofs of the cottages. This plan would answer better if more pains were taken to keep the tanks clean, but the poor are very negligent in such matters.

A simple plan to improve such water consists in filtering it through a box containing sand or gravel, which would remove any suspended matters which have been washed in. The tanks are cemented, and the water does not contain any impurities which cannot be removed by filtration; such water cannot contain any lime salts, and is therefore "soft," and well adapted for domestic use. But unless great cleanliness is maintained evil results may ensue from the development of vegetable organisms in it, or by the entrance of slugs and worms. These do not cause any harm apparently unless they are dead, when they may render the water impure.

Horsham, Worthing, West Worthing, and Shoreham, are provided with water-works, and a good supply of wholesome water is obtained; Shoreham further supplies the adjacent villages of Portslade, Southwick and Kingston.

Petworth is a small town which is very badly supplied with water. There are two sources, one which is known as the "Conduit water," and the other as the "River water." The Conduit water is limited in quantity, but excellent in quality; it is therefore supplied to very few houses; and for the use of the inhabitants two public taps have been erected, so that people may go and draw what they please. The town contains about 3000 people, and with few exceptions, they have to travel greater or less distances if they wish to obtain any good drinking water; some have to go a quarter or a third-of-a-mile, or even more. The second source is taken from the Rother, a stream which runs from west to east, and about a mile-and-a-half to the south of the town. Without being filtered, it is pumped up into a reservoir, whence it is conveyed by pipes along the streets; and public taps are put up here and there, so that the people can take what they want. The Conduit supply is supposed to be used for drinking, while the river supply is used for washing and other domestic purposes. This however is not the case, and many of the poor drink the river water rather than take the trouble of fetching the good water from such a distance; nor indeed is this to be wondered at, especially in wet or inclement weather; and thus the carelessness or indifference of parents may bring about disease when they give their children the impure water to drink. For this river water is rendered impure by the drainage of the town being allowed to flow into the river about half-a-mile *above* the spot whence the supply is drawn. This drain conveys away by far the greater part of the sewage of the town; in the latter part of its course it is open, and flows along a tortuous ditch into the stream; in this way a good deal of the solid matters are deposited, but the fluid portions pass on and contaminate the stream. The amount of sewage entering varies very much according to the state of the weather; in wet seasons the ditch is more thoroughly flushed, and the dirty slush is the more readily carried along. On reaching



the river the sewage is mixed with a large volume of water, and it may become partially purified by the action of the air and of growing plants, in its course of half-a-mile to the intake; but yet this water is contaminated, and the people of the town receive back their sewage in a very dilute form. Nor is this all; in the winter there are very frequent floods, and the water is yellow and turbid from suspended matters washed down, and, as there is no filtration, it is not uncommon to find a deposit of mud with worms, small fish, and decayed animal and vegetable matter in the water. The sewage hitherto has not contained all the excreta from the cesspools, because they are not in all cases connected with the drains, but of late many cesspools have been removed and closets erected in direct communication with the drains. It is, however, obvious that this improvement is attended with a corresponding evil, for in this way the river water is made worse. The sewage ought to irrigate the land before it enters the stream, and the ground is well adapted for this purpose. There are good springs near, from which wholesome and pure water can be obtained, and the river supply should be stopped. The fact remains that many do drink the impure water, and will not take the trouble to fetch from a pure source; nor can it be maintained that two public taps afford a proper supply for so many people. Several cases of typhoid fever have occurred in the town during the past year, and if the evacuations from such patients enter the sewer, they pollute the water, and might cause an epidemic to break out amongst those who drink such water.

The following table shows that Petworth possesses the highest death-rate in the district; nor was there during the year any serious outbreak of zymotic disease to account for it, as in the case of Horsham, where several children died from measles and diphtheria.

Town.	Population.	Deaths in 1874.	Rate per 1000 per Annum.
Littlehampton ...	3572	40	11·2
Worthing ... ..	7935	119	15·0
Horsham ... ..	7440	137	18·4
Petworth ... ..	3300	63	19·0

In Horsham the water from the water-works is very good, but many people still draw their supply from shallow wells. But Horsham is a very ancient town, and none can tell the amount of old drains and cesspools which have been used and disused; in two cases which came to my knowledge the closets have been drained into old wells, and thus contaminated their neighbours' supply. As the soil is of clay and not very pervious, pollution has not taken place to so great an extent



as might have been expected; yet in some parts of the town it is so bad as to be quite unfit to drink. In these cases the sanitary authority has compelled the owners to supply good water, and in all cases the order has been carried out.

The water at Worthing is taken from the chalk, and is of very good quality; the houses also are well supplied with it.

In all other places wells are the most common source of water. During the very dry summer many wells became empty, and the people were badly supplied for a time; in some places the wells were deepened, or water was laid on from water-works, but in none did it lead to more than temporary inconvenience, as the poor always allowed their neighbours who were badly off to use what water they had.

### DRAINS AND SEWERS.

The common system in a country village is to have an open cess-pit, or in many cases a partially covered one, and this is occasionally emptied. No care is taken usually as to whether any soakage can make its way into a well, but the two are generally some distance apart, and I have not found contamination from this source to be very common.

There is no town in the district which requires draining so much as Horsham, but the inhabitants are alive to the fact, and steps are being taken to remedy the evils which now exist.

There are three methods by which excreta may be removed:  
 1. By the water-carriage system. 2. By the dry-earth system.  
 3. By the pneumatic system. The first plan is only applicable to large places, and to towns which have an abundant water-supply; the second plan is extremely suitable for small villages and isolated houses; the third plan has been tried at present on but a small scale, and would be too expensive for any ordinary village.

Although the water-system is very convenient and easy to manage, yet it may give rise to mischief if not properly attended to. It must be remembered that a drain hides a nuisance but does not cure it, so if, by want of flushing, the drain or sewer is not kept clean, a foul and hurtful accumulation will arise and cause disease. But while drains take away from a house solid and liquid matters, it is most important to recollect that these materials rapidly decompose and give off offensive gases, and these gases from being light, pass up the drains and are ready to enter a house at every opportunity. The same pipes which carry away one nuisance bring back another. It is very common to find escape of sewer gas into a house, and to trace evil effects to this cause; it is equally common to find people who believe that traps efficiently prevent the escape of gas. This is an error, and in fact is contrary to daily experience. The only way to make drains fairly safe is to have as much ventilation in them as possible, so as to allow no gaseous products to accumulate.

A trap is useful to prevent any gases escaping into a room, but it

should always be placed outside a house, and any pipe from a scullery or wash-house should pass through the wall, and have its lower extremity over the trap, but not in direct communication with it. In this way, if any leakage occurs, the foul gas is blown away by the fresh air and does no harm. Traps, as a rule, are made too small, so that very often servants remove the trap so as to let the fluids run away the more easily; by this neglect sewer-gas often finds its way into a house; this, too, may often be noticed in the kitchen or scullery in the early morning before the doors and windows are opened. But since foul gases will accumulate and must escape, it is very needful to provide a pipe for this purpose, which, communicating with the drain at its lower end, is carried up above the eaves of the house, and allows any bad air to escape into the atmosphere, away from any doors or windows; and there is no better disinfectant than fresh air. Let this pipe also be outside the house, and then it can the more readily be seen to when it requires repairing. It will be as well to put briefly a few of the main points which should be attended to in draining a small town.

The main sewers should not carry off storm water as well as sewage, as this requires the channel to be of greater area, and causes it to be irregularly flushed, while in dry weather there is more room for foul gas to accumulate. A regular amount of water should pass down the drains daily, so as to keep them clean and the sewage moving; moving sewage in ventilated drains does very little harm. Large ventilating holes should be placed in each sewer at convenient places, and the soil pipes from each closet should also communicate with the fresh air as mentioned above. Let each closet be outside a house, and provided with a window which will open; this window should be large, and let in plenty of fresh air. Let no traps be placed inside a house; the worst place is under a sink, where one is generally to be found, and it is nearly always out of order, for no one can get to it. It is of no use trying the water-carriage system in a town where water is not laid on to each house from some water-works, as otherwise people will not attend to the flushing of the drains.

In villages the earth-system is the only way to deal effectually with the noxious matters. The main reason why village life is so healthy is because each house is constantly being supplied with wholesome and pure air; nor is there any complex arrangement of underground pipes in which noxious gases are always being manufactured and supplied to houses in towns. The earth-system will only be carried out efficiently when bye-laws are made providing that each house shall have an earth-closet, and by arrangements being made that dry earth shall be provided at regular intervals and the excreta removed. At present a kind of educational process is going on, and the plan is adopted by those who are anxious and willing to carry it out, and many a cottager uses the products to improve his small piece of garden. More especially am I anxious that all schools and workhouses should adopt this plan, as then it may be hoped that as the new generation become familiarised with the system, they will be willing to adopt it when they have houses of their own.



There are many kinds of earth-closets, but that is the best which is the simplest and where there is no machinery to get out of order. A galvanized iron tank can be often used with advantage, and as it is provided with wheels, it can be readily removed; Moule's pans have so frequently to be cleansed that the poor have great objections to using them. Another plan is to make a small cesspool of brick-work, lined with cement so as to prevent any leakage into a well, and provided with a light lid through which dry earth or ashes can be thrown. This can be emptied and cleansed whenever needful, and causes very little trouble.

#### AGES OF PERSONS LIVING.

The ages of persons living in the year 1871 in three unions are taken from the census returns and placed in Table VI.

These three districts were taken as showing some peculiarities in an agricultural population as compared with other districts. One marked feature is the preponderance of males over females, and this is just the reverse of what is met with in towns, or if the total for the whole of England is taken. Even in the county of Sussex the females exceed the males, and this excess is due to the large number of females in the towns. If Tables I. and VI. be compared it will be noticed that owing to the greater mortality in the first and second years of life among male than among female children, the girls under 5 years exceed in number the boys, although more of the latter are born. Up to 15 years of age the two sexes are nearly equal, but after this a great change is visible. The number of females between 15 years and 20 years is only 1572 as compared with 2111 in the previous quinquennial period; from 20 years to 25 years, there are 1369 females, and after this the number of women decreases in a more gradual and uniform manner. It is clear that this sudden change in the numbers living between 15 and 25 years is not due to any high rate of mortality at that time, for very few deaths occur in this period of life. The reason is that at this time many women leave the villages and seek a living in large towns; it explains, too, as will be presently seen, why it is that in many country districts the population is so stationary, or even declining; and it further accounts for the low birth-rate in small villages, because such places contain less than their average proportion of child-bearing women. A similar exodus must also take place amongst the males, as the numbers rapidly diminish from 10 to 30 years of age, and then more gradually decline. These facts show a marked difference in the distribution of the sexes from what is met with in urban districts, and they must be borne in mind in considering the death-rate.

Although the births constantly exceed the deaths, yet the increase of the population in three of the districts is not equal to the excess of births. The proportion varies in different portions of the district. Of the 85 parishes 54 showed an increase between 1861 and 1871, 10 were stationary, while in 21 there was a positive decrease.



UNION.	Population.		Registered in the 10 Years, 1861-70.			Excess of Registered Births over Deaths, 1861-70.	Increase of Population between the Censuses of 1861 and 1871.
	1861.	1871.	Marriages.	Births.	Deaths.		
Steyning ...	25,003	31,473	1,742	7,939	4,580	3,359	6,470
Horsham ...	17,876	19,331	1,131	5,752	3,292	2,460	1,455
Petworth ...	10,065	10,138	629	3,108	1,915	1,193	73
Thakeham ...	8,036	8,422	514	2,537	1,370	1,167	386
East Preston	17,423	21,591	1,332	5,530	3,546	1,984	4,168
Total	78,403	90,955	5,348	24,866	14,703	10,163	12,552

This table shows that in Petworth Union 1120 persons must have left the district during those 10 years, assuming that no fresh people came into the district. In Horsham 1005 persons, and in Thakeham 781 persons left. In East Preston Union 2184 persons, and in Steyning 3111 came into the district. Thus there is constantly going on a gradual migration from the small agricultural villages towards the larger towns, and the lines of increase closely follow the lines of railway. The greatest decrease is in Petworth Union, the villages in which are scattered widely and the means of communication are very limited. In Horsham Union, the town of Horsham has increased more rapidly than at any other period of its history; but in nearly all the surrounding villages the population is either stationary or decreasing. In the southern portion of the combined district the increase is much more marked. In the Steyning Union, Hove, New Shoreham, and smaller places lying on the coast have shown a rapid rise in population; and a similar change may be noticed in the East Preston Union, in the case of Worthing and Littlehampton.

The chief occupation of the district is purely agricultural, and since only a certain number can be employed on the land the surplus population find some other means of employment. Men and women alike leave and seek a living in large towns, while a great many girls go into service. The result of this is that for the most part the young and able-bodied leave, while the more aged and the less vigorous remain. But since those who leave are those capable of begetting children, while many of those who remain behind are either too young or too old, it follows that the birth-rate in small villages is always much lower than in towns. It is well known that agricultural labourers frequently have very large families, so that the birth-rate must not be

taken as representing that town life is more favourable to the production of children than country life, for no such comparison could be made unless the number of women in each case was known who were alive during the child-bearing period.

Another result of this migration from small villages is seen in the large proportion of paupers to the whole population, for as the old people remain they are infirm and unable to work and are obliged to apply for parish relief, and many have been receiving relief from the poor-rates for years. In health the labouring class can only earn enough to obtain the common necessities of life, and in sickness they must be provided for by others.

The increase in large towns arises from various causes ; the demand for employment, the salubrity of a place or its surrounding attractions, the development of some industry, &c., attract people to reside. This is especially noticeable near the coast. Between the South Downs and the sea there is a rapidly-increasing population springing up between Shoreham and Brighton, and many of these are occupied in cultivating market gardens, which supply neighbouring large towns with their produce. At Worthing and Littlehampton the increase is probably due to the attractions these places present for visitors and to the number of schools established there.

Another illustration of the healthy condition of the labouring population may be found by taking the ages of the in-door and out-door poor. In the Thakeham Union the ages of 408 paupers (in-door and out-door) are given ; of these there were—

68 between 60 and 70 years of age				
101	„	70	„	80
39	„	80	„	90
4	„	90	„	100

In this Union one person in 10 is a pauper ; the wages given are low, but the health in the district is good and many live to a great age.

#### COTTAGE ACCOMMODATION.

As a general rule the cottages for the labouring classes are good throughout the district. The best are those on the estates of large landowners, and many have been much improved in the last few years. Nearly every cottage in a village has a plot of garden around, and this yields a good supply of vegetables, while many also keep a pig and feed it from the garden produce. The worst cottages are those which belong to owners who are too poor to put them in repair or to provide the tenants with anything like comfort ; such houses are often in a very dilapidated condition, and are without any drains or proper cesspools, or have no shoots to collect rain-water and no paving around. Sometimes the cottages only have one living and one sleeping-room ; this is neither healthy nor decent, for as the family increases in size the parents and children have to sleep in the same room ; this, however, is not often the case in this district, and such



cases as have been met with have been remedied. Each cottage where there is a family should have three sleeping-rooms—one for the parents, one for boys, and one for girls; sometimes the occupier will sub-let a room, but whenever any over-crowding occurs it is easy to get rid of a lodger. The cottage should be so placed that the sun may shine upon it on every side throughout the day, and the living-room should have a south or a south-west aspect. It is better to have single or double houses than a long row of cottages, as then each house gets more sunshine and therefore heat and light. A cottage should have two stories so that the sleeping-rooms may be above the living-rooms, and the latter ought to be a foot higher than the surrounding ground; in this way damp may be averted, and cold and damp are frequent sources of illhealth and discomfort. Cottages should be built near each other and near a public road, as this is more cheerful than a solitary situation. It is also more convenient, as one oven or one wash-house will suffice for several cottages, and such a building could be erected away from the cottages. Each house should have a back as well as front entrance, as more fresh air can in this way be admitted. The rain-water should be collected and stored in a tank whence it can be readily pumped. The cesspool or closet should be some little distance from the house, and the earth-system should be adopted. No drain whatever should open into the house; to connect a sink with a drain it will suffice to carry the pipe through the wall and let it fall *over* an outside trap so that no sewer gas may enter the house. The slop-water can be thrown down a drain where there are several houses together, or over the garden among growing crops where there is a single house. No slut holes or accumulation of refuse must be allowed; the earth is the one great purifier of all refuse and rubbish, and everything can be buried or mixed with the earth, which in its turn is benefitted by the admixture. The essentials of a cottage are dryness and warmth, good ventilation, and avoidance of any drains inside the house or of accumulations of filth within it. These conditions can only be thoroughly carried out when the cottager himself shall have learnt how important it is to be clean.

#### OVER-CROWDING.

Several cases of over-crowding have been dealt with during the past year; where the excess was due to the presence of lodgers a remedy was soon provided. In cases where the inmates consisted of one family, and where the over-crowding was due to the accumulation of children in course of time, a remedy was found by sending the eldest out to sleep or by distributing them in some other way. It is not always easy for these people to obtain another house, and sometimes an owner will refuse to let a cottage to a man with a large family. Another difficulty lies in the fact that a man is made poorer by having so many children to keep, and he is, therefore, less able to afford to take a large cottage. On the estates of the larger land-

owners this is a matter of small importance, as the poor on such estates are comfortably housed and fresh cottages are continually being built; such cottages are let for a small sum per week out of all proportion to the actual cost of the house.

Throughout the district there is an average of 5·17 persons to each house; in the four largest towns the average is 5·30; in the more rural districts it is 5·10 (see Tables VII., VIII.). In England and Wales there were 5·03 persons to a house in 1871; in Ireland 5·63; and in Scotland no less than 8·02 individuals to each house. The number of cottages in this country is increasing in a slightly increased ratio to the number of people; in 1821 there were 5·75 persons to each inhabited house, and this number has gradually fallen to 5·36 in 1861, and 5·03 in 1871. It would appear probable that there is less over-crowding now than in former times.

#### TRADES.

There are no branches of industry in the district which demand any special inquiry. On the coast many are sea-faring men and some are employed in market-gardening; the greater number work on the farms.

The bake-houses, common lodging-houses, and slaughter-houses have been inspected at various times; in nearly every case the owners were found to have complied with the Acts and to have kept their property in a clean and healthy condition. In a few cases where improvement was needed the necessary alterations were made. No bad meat has been exposed for sale, and on the whole it may be said that the meat in this district is of excellent quality. In one instance only, a case of herrings was destroyed as being unfit for food.

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## T A B L E S.

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AGES AT DEATH. CAUSES OF DEATH.

DEATHS FROM ZYMOTIC DISORDERS.

VIOLENT AND ACCIDENTAL DEATHS.

AGES OF PERSONS.

PROPORTION OF PERSONS TO A HOUSE.

POPULATION.

RETURNS OF SICKNESS AND DEATHS.

TABLE I.—Showing the *Ages at Death* of 785 persons in the Nine Months, April to December, 1874, in the Combined Sanitary District, and of 1326 persons in Horsham Union in the Five Years 1865–69.

		Under 1	-2	-5	-10	-15	-20	-30	-40	-50	-60	-70	-80	-90	-100
For 9 Months in 1874	Male.....	437	22	22	25	6	10	30	34	30	37	43	53	35	2
	Female...	348	15	29	16	8	6	23	21	15	24	48	58	31	3
In Horsham Union, 1865–69 ... ..	Male.....	722	43	33	20	11	18	34	45	53	63	83	103	63	8
	Female...	604	26	32	22	14	20	50	48	46	38	71	85	46	6
Total ...	Male.....	1159	65	55	45	17	28	64	79	83	100	126	156	98	10
	Female...	952	41	61	38	22	26	73	69	64	62	119	143	77	9
Total ...		2111	106	116	83	39	54	137	148	147	162	245	299	175	19

603 died under 5 years, or 28·5 per cent.; 770 between 5 and 60 years, or 36·5 per cent.; 738 died over 60 years of age, or 35 per cent.

In England, 1871, 514,879 died :—

206,613, or 40 per cent., under 5 years of age.

189,766, or 37 " over 5 and under 60 years.

118,500, or 23 " " 60 years.

In England, for every 100 deaths in 1874 :—

Under 1 year, 24; 1 year and under 60, 52; over 60 years, 24.

In West Sussex :—

Under 1 year, 18; 1 year and under 60, 47; over 60 years, 35.



TABLE II.—Showing the Causes of Death of 785 persons in the Nine Months, April to December, 1874, in the Combined Sanitary District.

CAUSES OF DEATH.	Steyning R. S. A.		Horsham R. S. A.		Petworth R. S. A.		Thakeham R. S. A.		East Preston R. S. A.		Worthing U. S. A.		Littlehampton U. S. A.		West Worthing U. S. A.		Total.		Total both Sexes
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
All causes ...	92	65	124	89	80	56	49	35	36	37	43	48	11	16	2	2	137	348	785
Zymotic diseases ...	15	11	17	20	6	2	4	3	3	4	2	6	2	2	1	1	50	49	99
Dropsy ...	...	...	1	2	2	2	...	...	1	1	...	...	1	1	...	...	5	6	11
Cancer ...	3	...	3	4	...	...	2	...	1	...	...	3	...	1	...	...	9	8	17
Gangrene ...	...	...	1	...	1	...	...	...	1	...	1	...	1	...	...	...	5	...	5
Diabetes ...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	2	...	2
Purpura ...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	1
Abscess ...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Hydrophobia ...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Phthisis ...	12	7	14	11	9	3	6	3	5	2	7	6	1	2	...	...	54	34	88
Diseases of Brain ...	12	12	16	14	19	8	10	2	4	7	10	11	3	5	1	...	75	59	134
Organs of Circulation ...	7	8	8	7	9	6	3	4	2	3	3	4	...	3	...	...	32	35	67
Respiratory Organs ...	13	4	16	11	9	9	10	7	3	6	3	3	1	1	...	...	55	41	96
Digestive ...	5	7	9	7	5	7	2	4	2	2	1	3	1	...	...	...	24	30	54
Urinary ...	4	2	5	2	1	...	...	...	2	1	1	...	...	...	...	...	13	5	18
Child-birth ...	...	1	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	3	3
Congenital Debility and Atrophy ...	6	2	11	1	5	6	2	2	2	1	4	2	...	...	...	...	30	14	44
Premature Birth ...	2	3	5	3	2	4	1	6	2	1	1	3	...	...	...	...	13	20	33
Old Age ...	5	8	12	6	4	7	6	3	3	7	6	6	...	1	...	...	36	39	75
Accidents ...	2	...	2	1	3	...	1	...	4	...	2	...	1	...	...	...	15	1	16
Suicide ...	5	...	2	...	2	...	1	...	1	1	1	1	...	...	...	12	3	15	
Murder ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Unclassified ...	...	...	1	...	1	1	...	...	...	...	...	...	...	...	...	...	2	1	3

TABLE III.—Showing the *Ages at Death* of the 785 persons in the Combined Sanitary District.

NAME OF SANITARY AUTHORITY.	Popula- tion.	Total.	Under 1	-2	-5	-10	-15	-20	-30	-40	-50	-60	-70	-80	-90	-100
Steyning Rural	15,016	{ M. 92 F. 65 }	17	10	5	6	...	1	7	10	5	6	10	9	6	...
Horsham ditto	19,802	{ M. 124 F. 89 }	8	2	7	3	1	1	4	5	3	4	8	13	5	1
Petworth ditto	10,162	{ M. 80 F. 56 }	14	4	9	8	4	2	7	7	10	6	11	11	13	...
Thakeham ditto	8,540	{ M. 49 F. 35 }	9	1	5	4	...	...	6	9	3	5	7	11	4	...
East Preston ditto	9,320	{ M. 36 F. 37 }	9	3	3	...	1	1	...	1	1	2	4	6	7	1
Worthing Urban	7,935	{ M. 43 F. 48 }	11	1	2	1	...	1	3	3	3	...	4	5	1	...
Littlehampton ditto	3,572	{ M. 11 F. 16 }	3	...	...	...	2	1	2	2	6	4	9	8	5	...
West Worthing ditto	450	{ M. 2 F. 2 }	...	...	1	...	...	...	3	1	...	1	...	...	2	...
Total Population	74,797	M. 437 F. 348	88	22	22	25	6	10	30	34	30	37	43	53	35	2
Total both Sexes	...	785	136	37	51	41	14	16	53	55	48	61	91	111	66	5

224 died under 5 years of age (132 males, 92 females). 288 died between 5 and 60 years (172 males, 116 females).  
 273 died 60 years and upwards (133 males, 140 females).



TABLE IV.—Showing the Deaths from Zymotic Disorders for Nine Months, April to December, 1874.

NAME OF SANITARY AUTHORITY.	Total.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Hooping Cough.	"Continued" Fever is			Diarrhoea.	Cholera.	Rheumatic Fever.	Erysipelas.	Pyæmia.	Puerperal Fever.	Total.	Deaths from all causes.	Zymotic Death-rate to 1000 Population.
							Typhus Fever.	Enteric Fever.	Of other or doubtful sort.									
Steyning Rural	{ M. 15 F. 11	...	3	...	2	4	...	...	...	5	...	...	1	...	...	26	157	2.3
Horsham ditto	{ M. 17 F. 20	...	6	2	5	1	...	...	...	3	...	...	...	...	...	37	213	2.5
Petworth ditto	{ M. 6 F. 2	...	...	...	...	3	...	2	1	...	...	1	1	...	...	8	136	1.0
Thakeham ditto	{ M. 4 F. 3	...	2	...	...	1	...	1	...	...	...	...	...	...	...	7	84	1.0
East Preston ditto	{ M. 3 F. 3	...	...	...	1	...	...	...	1	2	...	...	...	...	...	7	73	.9
Worthing Urban	{ M. 2 F. 6	...	...	...	...	1	...	...	...	3	...	...	...	1	...	8	91	1.3
Littlehampton ditto..	{ M. 2 F. 2	...	...	...	1	1	...	...	...	...	...	...	1	...	...	4	27	1.4
West Worthing ditto	{ M. 1 F. 1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	2	4	...
Total both Sexes...	M. 50	...	11	2	9	10	...	1	1	12	...	2	2	...	...	...	...	...
	F. 49	...	6	1	12	10	...	3	2	10	...	...	...	1	2	...	...	...
		99	17	3	21	20	...	4	3	22	...	2	4	1	2	99	785	1.7

TABLE V.—Showing the *Violent and Accidental Deaths* among the 785 persons.

CAUSE OF DEATH.	Steyning.		Horsham.		Petworth.		Thakeham.		East Preston.		Worthing.		Littlehampton.		West Worthing.		Total.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
<i>Murder</i>	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total by Murder	2	...	2	...	1	...	...	...	1	...	...	...	...	...	1	...	8	...
<i>Suicide—</i>	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
By Hanging	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Shooting	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cutting throat	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Drowning	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Strangling	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Being run over by a train	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total by Suicide	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<i>Accidents—</i>	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
By Scalding	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Being burnt	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Falling	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Being crushed by machinery, &c.	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Being struck by a train	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Drowning	2	...	...	...	1	...	...	...	3	...	...	...	...	...	...	...	...	...
Total by Accident	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total from all causes	28	4															28	4
Total both Sexes	32	...															32	...



TABLE VI.—Showing the Ages of Persons living in Horsham, Petworth, and Thakeham Unions.

SANITARY AUTHORITY.	Population.	Under 5	5-	10-	15-	20-	25-	30-	35-	40-	45-	50-	55-	60-	65-	70-	75-	80-	85-	90-	95-	& upwards 100
Horsham ...	19,331 { M. 9824 F. 9507 }	1328 1361	1255 1207	1039 1091	931 875	810 698	707 658	567 610	567 531	507 500	433 462	446 397	351 321	326 276	217 207	174 145	92 95	53 53	15 15	1 1	... 1	... ...
Thakeham ...	8,422 { M. 4313 F. 4109 }	530 596	564 535	454 501	424 302	358 292	271 268	222 259	211 237	264 214	207 212	214 161	165 161	140 110	111 103	82 74	59 41	26 32	8 8	3 3	... ...	... ...
Petworth ...	10,138 { M. 5290 F. 4848 }	679 647	597 648	564 519	505 395	461 379	339 329	336 279	292 283	239 239	263 227	259 227	199 191	173 162	179 131	111 98	64 57	22 29	5 8	3 ...	... ...	... ...
Total ...	37,891 { M. 19,427 F. 18,464 }	2537 2604	2416 2390	2057 2111	1860 1572	1629 1369	1317 1255	1125 1148	1070 1054	1010 953	903 901	919 785	725 673	639 548	507 441	337 317	215 193	106 114	28 31	7 4	... 1	... ...

TABLE VII.—Showing the *Proportion of Persons to a House* in the Combined Sanitary District; also, the *Acreage and Population* in 1871.

UNION.	Area in Statute Acres.	Population in 1871.	Houses in 1871.	Persons to a House.
East Preston ...	32,626	18,635	3,489	5·34
Horsham ...	69,582	19,331	3,804	5·08
Petworth ...	44,747	10,138	2,008	5·05
Steyning ...	45,678	14,060	2,659	5·29
Thakeham ...	38,784	8,422	1,705	4·94
Total ...	231,417	70,586	13,665	5·17

TABLE VIII.—Showing the *Average Number of Persons in a House* in the four largest places and in the more rural parts; also, the *Acreage and Population* in 1871.

TOWN.	Area in Statute Acres.	Population in 1871.	Houses in 1871.	Persons to a House.
Horsham ...	10,741	7,076	1,388	5·09
Worthing ...	584	7,413	1,331	5·57
Petworth ...	5,982	3,304	616	5·36
Littlehampton ...	1,222	3,272	625	5·23
Total ...	18,529	21,065	3,960	5·30
In rest of District	212,888	49,521	9,705	5·10



NEW CASES of Sickness and Deaths among Paupers (both in-door and out-door) belonging to the District, and among other Persons belonging to the District who may be (in- or out-) Patients of any Hospital or Dispensary or other Public Medical Institution, whether within or without the District.

NAMES OF DISEASES.	SICKNESS.		DEATHS.	
	Aged under 5.	Aged 5 and upwards.	Aged under 5.	Aged 5 and upwards.
ALL DISEASES AND INJURIES	I. 35	II. 229	III. 4	IV. 13
Small-pox { With marks of vaccination Without marks of vaccination Where vaccination not known or doubtful	...	...	...	...
Measles	4	1	...	...
Scarlatina	...	1	...	...
Diphtheria	1	6	1	...
Hooping-Cough	7	4	1	...
“Continued” Fevers { Typhus Enteric Of other or doubtful sorts	...	...	...	...
Diarrhoea and Dysentery	1	2	...	...
Cholera	2	4	1	...
Rheumatic Fever	5	...	...	...
Erysipelas	...	...	...	...
Pyæmia	...	3	...	...
Puerperal Fever	...	3	...	...
Ague	...	...	...	...
Phthisis	...	1	...	...
Bronchitis, Pneumonia, and Pleurisy	...	6	...	3
Heart-Disease	1	10	...	1
Injuries	...	3	...	...
	1	11	...	...

TABLE X.—Return of *Sickness and Deaths* during the Half-year, July 1st to December 31st, 1874.

NAMES OF DISEASES.		SICKNESS.			DEATHS.	
		Aged under 5.	Aged 5 and upwards.	Aged under 5.	Aged 5 and upwards.	
		I.	II.	III.	IV.	
ALL DISEASES AND INJURIES	...	83	547	1	11	
Small-pox	{ With marks of vaccination Without marks of vaccination... Where vaccination not known or doubtful	...	...	...	...	...
Measles	...	20	28	1	...	...
Scarlatina	...	7	...	...	...	...
Diphtheria	...	3	10	...	...	...
Hooping-Cough	...	1	...	...	...	...
“Continued” Fevers	{ Typhus Enteric Of other, or doubtful sorts	...	...	...	...	...
	...	...	2	...	...	...
	...	...	3	...	...	...
Diarrhoea and Dysentery	...	8	15	...	...	...
Cholera	...	...	...	...	...	...
Rheumatic Fever	...	...	...	...	...	...
Erysipelas	...	...	1	...	...	...
Pyæmia	...	...	...	...	...	...
Puerperal Fever	...	...	...	...	...	...
Ague ...	...	...	...	...	...	...
Phthisis	...	...	9	...	...	1
Bronchitis, Pneumonia, and Pleurisy	...	4	16	...	...	2
Heart-Disease	...	...	5	...	...	...

NEW CASES of Sickness and Deaths among Paupers (both in-door and out-door) belonging to the District, and among other Persons belonging to the District who may be (in- or out-) Patients of any Hospital or Dispensary or other Public Medical Institution, whether within or without the District.



TABLE XI.—Return of *Sickness and Deaths* during the Half-year, July 1st to December 31st, 1874.

NAMES OF DISEASES.		SICKNESS.			DEATHS.	
		Aged under 5.	Aged 5 and upwards.	Aged under 5.	Aged 5 and upwards.	
ALL DISEASES AND INJURIES	...	I. 63	II. 398	III. 5	IV. 13	
Small-pox	{ With marks of vaccination Without marks of vaccination Where vaccination not known or doubtful	...	...	...	...	...
Measles	...	...	...	...	...	...
Scarlatina	...	1	5	...	...	...
Diphtheria	...	...	...	...	...	...
Hooping-Cough	...	6	8	1	1	...
“Continued” Fevers	{ Typhus Enteric	...	...	...	...	...
Diarrhoea and Dysentery	{ Of other, or doubtful sorts	...	2	...	...	...
Cholera	...	7	25	...	1	...
Rheumatic Fever	...	...	...	...	...	...
Erysipelas	...	...	1	...	1	...
Pyæmia	...	1	1	...	1	...
Puerperal Fever	...	...	...	...	...	...
Ague ...	...	...	...	...	...	...
Phthisis	...	...	...	...	...	...
Bronchitis, Pneumonia, and Pleurisy	...	...	7	...	2	...
Heart-Disease	...	7	28	...	1	...
Injuries	...	...	2	...	...	...
	...	3	20	...	...	...

NEW CASES of Sickness and Deaths among Paupers (both in-door and out-door) belonging to the District, and among other Persons belonging to the District who may be (in- or out-) Patients of any Hospital or Dispensary or other Public Medical Institution, whether within or without the District.

TABLE XII.—Return of *Sickness and Deaths* during the Half-year, July 1st to December 31st, 1874.

NAMES OF DISEASES.		SICKNESS.			DEATHS.	
		Aged under 5.	Aged 5 and upwards.	Aged under 5.	Aged 5 and upwards.	
ALL DISEASES AND INJURIES	...	I. 22	II. 98	III. ...	IV. 3	
Small-pox { With marks of vaccination Without marks of vaccination... Where vaccination not known or doubtful	...	...	...	...	...	
Measles	...	...	1	...	...	
Scarlatina	...	2	3	...	...	
Diphtheria	...	...	...	...	...	
Hooping-Cough	...	9	10	...	...	
“Continued” Fevers { Typhus Enteric Of other, or doubtful sorts	...	...	...	...	...	
Diarrhœa and Dysentery	...	...	1	...	...	
Cholera	...	...	...	...	...	
Rheumatic Fever	...	...	...	...	...	
Erysipelas	...	...	...	...	...	
Pyæmia	...	...	...	...	...	
Puerperal Fever	...	...	...	...	...	
Ague ...	...	...	...	...	...	
Phthisis	...	...	2	...	...	
Bronchitis, Pneumonia, and Pleurisy	...	...	9	...	...	1
Unsettled Diseases	...	...	4	...	...	

NEW CASES of Sickness and Deaths among Paupers (both in-door and out-door) belonging to the District, and among other Persons belonging to the District who may be (in- or out-) Patients of any Hospital or Dispensary or other Public Medical Institution, whether within or without the District.



NEW CASES OF SICKNESS AND DEATHS AMONG PAUPERS (BOTH IN-DOOR AND OUT-DOOR) BELONGING TO THE DISTRICT, AND AMONG OTHER PERSONS BELONGING TO THE DISTRICT WHO MAY BE (IN- OR OUT-) PATIENTS OF ANY HOSPITAL OR DISPENSARY OR OTHER PUBLIC MEDICAL INSTITUTION, WHETHER WITHIN OR WITHOUT THE DISTRICT.		SICKNESS.			DEATHS.	
NAMES OF DISEASES.		Aged under 5.	Aged 5 and upwards.		Aged under 5.	Aged 5 and upwards.
		I.	II.		III.	IV.
ALL DISEASES AND INJURIES	...	26	178		2	4
Small-pox { With marks of vaccination ... Without marks of vaccination... Where vaccination not known or doubtful	...	...	...		...	...
Measles	...	...	...		...	...
Scarlatina	...	5	5		...	...
Diphtheria	...	...	...		...	...
Hooping-Cough	...	6	6		...	...
"Continued" Fevers { Typhus Enteric Of other, or doubtful sorts	...	...	...		...	...
	...	...	1		...	...
	...	...	2		...	...
Diarrhoea and Dysentery	...	...	5		...	...
Cholera	...	...	...		...	...
Rheumatic Fever	...	...	...		...	...
Erysipelas	...	...	1		...	...
Pyæmia	...	...	...		...	...
Puerperal Fever	...	...	...		...	...
Ague ...	...	...	2		...	...
Phthisis	...	...	1		...	...
Bronchitis, Pneumonia, and Pleurisy	...	2	1		...	...
Heart-Disease	...	...	2		...	...
Injuries	...	2	9		...	...

TABLE XIV.—Return of *Sickness and Deaths* during the Half-year, July 1st to December 31st, 1874.

NAMES OF DISEASES.	SICKNESS.			DEATHS.	
	Aged under 5.	Aged 5 and upwards.	Aged under 5.	Aged 5 and upwards.	
ALL DISEASES AND INJURIES	I. 84*	II. 417*	III. 1	IV. 6	
Small-pox { { With marks of vaccination { Without marks of vaccination { Where vaccination not known or doubtful	...	...	...	...	
Measles	...	...	...	...	
Scarlatina	...	...	...	...	
Diphtheria	...	...	...	...	
Hooping-Cough	...	...	...	...	
“Continued” Fevers { { Typhus { Enteric { Of other or doubtful sorts	5	2	...	...	
Diarrhoea and Dysentery	1	...	...	...	
Cholera	13	10	...	...	
Rheumatic Fever	...	...	...	...	
Erysipelas	...	...	...	...	
Pyæmia	...	1	...	1	
Puerperal Fever	...	...	...	...	
Ague ...	...	...	...	...	
Phthisis	...	1	...	...	
Bronchitis, Pneumonia, and Pleurisy	...	2	...	1	
Heart-Disease	2	9	...	2	
Injuries	...	...	...	...	
	...	15	...	...	

NEW CASES of Sickness and Deaths among Paupers (both in-door and out-door) belonging to the District, and among other Persons belonging to the District who may be (in- or out-) Patients of any Hospital or Dispensary or other Public Medical Institution, whether within or without the District.



TABLE XV.—Return of *Sickness and Deaths* during the Half-year, July 1st to December 31st, 1874.

NAMES OF DISEASES.	NEW CASES OF SICKNESS AND DEATHS AMONG PAUPERS (BOTH IN-DOOR AND OUT-DOOR) BELONGING TO THE DISTRICT, AND AMONG OTHER PERSONS BELONGING TO THE DISTRICT WHO MAY BE (IN- OR OUT-) PATIENTS OF ANY HOSPITAL OR DISPENSARY OR OTHER PUBLIC MEDICAL INSTITUTION, WHETHER WITHIN OR WITHOUT THE DISTRICT.			
	SICKNESS.		DEATHS.	
	Aged under 5.	Aged 5 and upwards.	Aged under 5.	Aged 5 and upwards.
ALL DISEASES AND INJURIES	I. 2	II. 27	III. ...	IV. 1
Small-pox { With marks of vaccination ... Without marks of vaccination ... Where vaccination not known or doubtful	... ... ...	... ... ...	... ... ...	... ... ...
Measles ...	...	...	...	...
Scarlatina ...	...	...	...	...
Diphtheria ...	...	...	...	...
Hooping-Cough ...	...	...	...	...
“ Continued ” Fevers { Typhus ... Enteric ... Of other, or doubtful sorts	... ... ... ...	... ... ... ...	... ... ... ...	... ... ... ...
Diarrhoea and Dysentery ...	...	...	...	...
Cholera ...	...	...	...	...
Rheumatic Fever ...	...	...	...	...
Erysipelas ...	...	...	...	...
Pyæmia ...	...	...	...	...
Puerperal Fever ...	...	...	...	...
Ague ...	...	...	...	...
Phthisis ...	...	1	...	...
Bronchitis, Pneumonia, and Pleurisy	...	...	...	...
Heart-Disease ...	...	...	...	...
Injuries ...	...	1	...	...

COMBINED SANITARY DISTRICT OF WEST SUSSEX. POPULATION 1871, 70,586.  
TABLE XVI.—Return of *Sickness and Deaths* during the Half-year, July 1st to December 31st, 1874.

NAMES OF DISEASES.	SICKNESS.			DEATHS.	
	Aged under 5.	Aged 5 and upwards.	Aged under 5.	Aged 5 and upwards.	
	I. 315	II. 1894			
ALL DISEASES AND INJURIES	...	...	III. 13	IV. 51	
Small-pox { { With marks of vaccination { Without marks of vaccination... { Where vaccination not known or doubtful	...	...	...	...	
Measles	24	30	1	...	
Scarlatina	15	14	...	...	
Diphtheria	4	16	1	...	
Hooping-Cough	34	30	2	1	
"Continued" Fevers { { Typhus { Enteric { Of other, or doubtful sorts	...	...	...	...	
	1	5	...	...	
	3	7	...	...	
Diarrhoea and Dysentery	33	60	1	1	
Cholera	...	...	...	...	
Rheumatic Fever	...	4	...	1	
Erysipelas	1	7	...	2	
Pyæmia	...	...	...	...	
Puerperal Fever	...	...	...	...	
Ague	...	4	...	...	
Phthisis	...	28	...	7	
Bronchitis, Pneumonia, and Pleurisy	16	73	1	6	
Heart-Disease	...	16	...	...	
Injuries	6	84	...	...	